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## Development of Accessible Design in Malaysia

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### Abstract

Malaysia has been actively providing accessibility in the built environment since the country signed the ‘Proclamation on the Full Participation and Equality of People with Disabilities in the Asia-Pacific Region’ in 1994. However, Malaysia has limitations in enforcing legislation pertaining to accessibility. One of the concerns was the local authorities’ role in having their own mechanisms to create a Barrier Free built environment. The objective is to highlight the gaps in Malaysia’s regulations and to illustrate the research development of the Accessible Design infrastructure for disabled people. The outcome will describe Malaysia’s experience in Accessible Design.

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**Keywords:** Accessibility; barrier free; built environment; legislation; transportation

### 1. Introduction

Removing barriers and providing access are fundamental needs for disabled persons in Malaysia in order to achieve social equity in all areas including: access to public facilities, amenities, services and buildings; public transport facilities; education; employment; information, communication and technology; cultural life; recreation, leisure and sport. Apart from accessibility, disabled persons should also have access to health and rehabilitation (Laws of Malaysia, Act 658, Persons with Disabilities Act Malaysia (2008).

Throughout its history, Malaysia’s nation building model has been mostly a top-down approach, with the Government establishing policies while initiating development that the private and business sectors

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would follow suit. This situation is now changing because of the need to achieve a developed nation status by 2020, as well as to improve the quality of life of its citizens.

The introduction of the Law of Malaysia, Act 658, Persons with Disabilities Act in 2008 indicates a move forward in the right direction to empower Persons with Disabilities (PWD). Interpretations were made of concepts such as Universal Design<sup>1</sup> reflecting a more global perspective and commitment of issues relating to PWD and Malaysia's obligation to the Convention on the Rights of PWD that was ratified on 19 July, 2010. The notion of the Social Model of Disability was also suggested throughout the Act, where disability is defined as an evolving concept, whereas prior to the 2008 Act, it is very much perceived as charity and welfare, based on the Medical Model focusing on impairments and negative perceptions. The overall idea is to recognize that disability results from the interaction between PWD and environmental barriers that hinders their full and effective participation in society on an equal basis with persons without disabilities (PWD Act Malaysia, 2008:7).

The Prime Minister of Malaysia, Dato' Sri Mohd Najib Bin Tun Haji Abdul Razak has recognized the need to solve problems faced by the country in these matters. He stated that, 'the Government has started on a comprehensive transformation plan while, at the same time, strengthen its social justice agenda for the people,' in striving to develop as a 'high-income nation' which is reflected in the 10<sup>th</sup> Malaysian Plan (Prime Minister's Department, 2010). The Prime Minister further supported the social justice agenda by having an 'urgency in actions and decisions' to fulfil the 'the philosophy of 1Malaysia, with its thrust of 'People First, Performance Now' (Prime Minister's Department, 2010). The Malaysian Government's support on the rights of PWD was echoed in 2006, in the meeting of the National Council on Local Government, when the Prime Minister who was, the Deputy Prime Minister then, said that, 'all buildings and public amenities must be friendly to PWD to cater to their needs,' and that apart from new buildings, 'existing buildings and public amenities, the local authorities would provide the guidelines to make these places friendly to them' (Malaysian Information Network on Disabilities, 2010).

Any issues regarding PWD are still under the control of the Ministry of Women, Family and Community Development, under the Department of Social Welfare Malaysia (DSWM) since 1947, under the British rule. The British established the Department of Community Welfare, Malaya from 1946 and the Department of Social Welfare Malaysia started in 1964 after the Independence from the British (JKM, 2011). It follows that the 2008 Act serves more of an administrative and enabling legislative mechanism, rather than a discrimination act with penalizing measures, but it is a necessary step in organizing and strategizing the country's policies, regulations and standards regarding Accessible Design. The former Minister of the Ministry of Women, Family and Community Development (MWFCDD) who acts as the Chairman of the National Council for PWD, in 2010, has spoken consistently on the fundamental right of PWD and recently references were made to the Malaysian National Key Result Areas<sup>2</sup> (NKRA) especially with regards to public transportation, thus reflecting on the Prime Minister of Malaysia's speech that is to 'increase the number of public transport users to 25% by end of 2012 from the present 16%' (Star Online, 2009). However, the non-governmental organizations are concerned that 'the government have yet to set up a main body to deal with public transportation' (Star Online, 2009a). The Government then countered the skepticism by establishing The Land Public Transport Commission

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<sup>1</sup> Universal Design means the design of products, environments, programmes and services to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design and shall include assistive devices for particular groups of PWD where this is needed (PWD Act Malaysia, 2008:2)

<sup>2</sup> 'The Government Transformation Program under Prime Minister Dato' Sri Mohd Najib Bin Tun Haji Abdul Razak has included amongst its six National Key Result Areas, one specifically addressing the upgrading of urban public transportation in the medium term. It is therefore timely that the Government of Malaysia adopts and enforces accessibility standards for planning of public transport, public facilities and infrastructure' MWFCDD Minister's statement, (UNDP, 2010)

(SPAD)<sup>3</sup> to ‘propose policies and plans in relation to or affecting land public transport’ (SPAD, 2011) (UNDP, 2010)<sup>4</sup>

With the establishment of the Department of Standards Malaysia (DSM) under the Ministry of Science, Technology and Innovation, there is a shift in priorities and targets, where DSM is ‘mandated by the Government of Malaysia to function as the National Standards Body (NSB) as well as the National Accreditation Body (NAB) through the Standards of Malaysia Act 1996 (Act 549)’ (Department of Standards Malaysia, 2012) and it set out The National Standards and Strategy Plan (NSSAP) approved by the Cabinet in 13 October 2004.

In the area of Accessible Design, efforts are being made to refer to the development of international standards in the region. ‘Accessible design extends standard design to people with performance and mobility limitation. Its purpose is to maximize the number of people who can readily use a product, building, or service. This can be achieved either by designing products, services, and environments that are readily usable by most users without any modification, or by means of standardized interfaces compatible with special products for PWD’ (Faridah, 2008). Along with the PWD Act 2008, there are other legislation and regulation such as the Uniform Building By Law 34A, other state laws, circulars, policies, guidelines, the Convention on the Rights of PWD, which Malaysia ratified. In general, Accessible Design concerns mainly with PWD on accessibility and promote Universal Design rather, which is regarded to be more embracing of all types of people’s needs, including the elderly, children and pregnant women.

The following overview on Accessible Design, in particular for the Built Environment and Transportation focuses on the development of policies, legislation, standards, guidelines, research and implementation of the regulations in Malaysia. The objective of this study is to highlight the gaps in Malaysia’s regulations and to illustrate the research development of the Accessible Design infrastructure for disabled people. Accessible Design on other aspects such as the Accessible Design of information, communication and technology and products are not included in this study.

## **2. The study on accessible design (AD) in Malaysia**

The study focuses more on Accessible Design of Built Environments and Transportation for PWD in Malaysia. Most of the secondary data was taken from reports and presentations made by government agencies and public universities, with observations made by the authors as well as newspaper articles.

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<sup>3</sup> The Land Public Transport Commission (SPAD) was officially established on 3 June 2010 following the passing of the Suruhanjaya Pengangkutan Awam Darat (SPAD) Act 2010 by Parliament in May 2010. The Commission gained its full powers on 31 January 2011 with the gazetting of the Land Public Transport Act 2010. SPAD, which comes directly under the purview of the Prime Minister, brings the functions of drawing up policies, planning and regulating all aspects of train, bus and taxi services as well as road- and rail-based freight transport under one roof.

<sup>4</sup> UNDP, 2010, A Review of International Best Practice in Accessible Public Transportation for PWD, June 2010, UNDP Malaysia. “Disabled people have a fundamental right to public transportation and this right has legal basis in the PWD Act 2008. It states that they “shall have the right to access to and use of public transport facilities, amenities and services” and providers of these facilities must ensure that they “conform to universal design” [Article 27(1 & 2)]. Malaysia also has obligations under the Biwako Millennium Framework whose goal is to promote an inclusive, barrier-free and rights based society and more recently became a signatory to the Convention on the Rights of PWD. It therefore has obligations to ensure that State Parties take appropriate measures so that PWD will have access to public transport and the physical environment” Furthermore, “The Government Transformation Program under Prime Minister Dato’ Sri Mohd Najib Bin Tun Haji Abdul Razak has included amongst its six National Key Result Areas, one specifically addressing the upgrading of urban public transportation in the medium term. It is therefore timely that the Government of Malaysia adopts and enforces accessibility standards for planning of public transport, public facilities and infrastructure.”

As a developing nation, Malaysia needs to play catch up to developed nations and rather than (re)invent new technologies, which can take a long time and investment, Malaysians would adopt and then adapt, i.e. innovate to certain extent, the technologies and products to suit the local situation, needs and context. This has also been supported by Najib, who was also Finance Minister that ‘Technology-based innovation was one sure way of obtaining a sustainable competitive edge’ (Bernama, 2011).

## 2.1. Demographic data

The population of Malaysia is 27.6 million people, based on the preliminary count of the national census done in 2010. Malaysian age expectancy male is at 72.5 years and the age expectancy for female is at 76.5 years. There is a discernable rise in disability resulting from traffic accidents and disasters and also a rise in becoming to have disabilities after birth. Traffic accidents in Malaysia have been increasing at the average rate of 9.7% per annum over the last three decades from the mid 1970s. The total number of road accidents had increased from 24,581 cases in 1974 to 328,264 cases in 2005, reaching more than 135% increase of accident cases over 30 years (Mohamad Nizam, 2005).

## 2.2. PWD demographics

The number of PWD registered with the Department of Social Welfare Malaysia is 313,685 or 1.16% of the population as of August 2010. As registration is voluntary, and World Health Organization estimates that 5 - 10% is the truer percentage, latest information on the unpublished census confirmed that 2.7% of population is PWD (Department of PWD, Malaysia, 2010). The percentage of people with learning disabilities is the highest at 38.4%, whereby persons with physical disabilities account for 34.7% of the total (see Table 1).

Table 1. Breakdown of different categories of PWD registered in August 2010 (Department of PWD, DSWM)

Type of disability	Number
Learning	120,414
Physical	108,952
Hard of hearing and deaf	39,814
Sensory	27,821
Mental	3,295
Speech	249
Others	13,140
TOTAL	313,685

### 2.3. PWD Background and Issues

The definition of PWD is based on the PWD Act Malaysia 2008, Preliminary, Interpretation 2 (PWD include those who have long term physical, mental, intellectual or sensory impairments, which in interaction with various barriers may hinder their full and effective participation in society) and that the registrations of PWD are carried out voluntarily throughout country at all welfare offices at the district, state and national level. The benefits of registering include (JKM, 2011):

- Medical benefits
- Rehabilitation services, medical treatment and vocational training
- Academic education at special schools
- Financial assistance, prostheses and support equipment
- Consideration for eligibility for Workers with Disabilities Allowance
- Consideration for eligibility for care and shelter, education and training at DSWM/NGOs institutions under the Rehabilitation in the Community Program (PDK)
- Job opportunities in public and private sectors

An incentive allowance is given to PWD who has a job but earning less than MYR 750.00 per month. The incentive is to encourage them to remain working. A launching aid scheme is given to PWD having the knowledge and skill but lack financial means to start a small business. Those who earned low income are given maximum of MYR 2,700 (JKM, 2011). The Government provides assistance in securing jobs in manufacturing sector, firms and government agencies. For PWD who are unable to join the government or private sector services, training are provided through the cooperation of government agencies, private and statutory bodies at protected workshops, which provide job opportunities (JKM, 2011). The Government also provides assistance in rehabilitating and improving the quality and level of life of the PWD, by giving appropriate rehabilitation and skills training, to enable them to be more self-reliant. Among list of institutions for PWD are *Sinar Harapan* Garden, Industrial Training and Rehabilitation Centre in Bangi, Selangor, *Daya* Workshops, rehabilitation in community centers and cluster homes. The services provided include (JKM, 2011):

- Caring, shelter and rehabilitation
- Provision of facilities for physical, social and mental needs
- Looking after the health and safety of the residents
- Provide education, guidance and vocational training
- Reintroduction into society
- Organize production activities related to the local community
- Provide counselling

The Government had, in 1981, expanded double tax relief to employers employing workers with disability and, in 1991; the Government had provided further exemption to parents who have children with disability who are below 18 years old. Tax rebates are also given to tax payers who bought special equipment for their own use and for their children or parents with disability (JKM, 2011a). As a continuous incentive to care for PWD and in addition to MYR 5,000 and MYR 3,000 in personal and wife tax relief, respectively, the Government has approved a further tax relief of MYR 5,000 to tax payer with disability and MYR 2,500 to the spouse beginning from 1995 (JKM, 2011a).

The Government's commitment to provide job opportunities to PWD is proven through the issue of Service Circular No. 10/1988 whereby a quota of 1% of all job opportunities in the public sector are reserved for PWD. For the Private Sector, a Committee for the Promotion of Employing PWD in Private Sector was established in 1990 under the Labour Department of Peninsular Malaysia and the Practice Code in Employing PWD in the Private Sector was formulated as guidelines to government agencies, employers, employers associations, employees, trade unions and associations of PWD and individual

PWD, for the registration and job placement of PWD in the private sector (JKM, 2011). In general the policies that the Government has established are as follows (Noraini, 2010):

- National Welfare Policy (1990)
- National Social Policy (2003)
- National Policy for PWD (2007)
- National Plan of Action for PWD (2007-2012)
- Service Circular No 3 of 2008: Implementation of 1% Policy on Employment Opportunities for PWD in the Public Sector

The National Policy for PWD (2007) has included 'Accessibility' as one of the key areas, whereby the National Plan of Action for PWD (2007-2012) has 28 strategies, drawn to realize the objectives set out in the Policy and is being carried out through multi-sectoral collaboration, including the following (Noraini, 2010):

- Ensuring a barrier-free environment including facilities within and outside the building, at the workplace, at home and in public areas
- Enhancing user-friendly transportation facilities for PWD
- Encouraging the availability of facilities and access to information and communications technology (ICT)
- Encouraging universal design in the construction of houses and localities.

### **3. Accessible design of built environments**

'The current legislation is not enough for local authorities to monitor and check whether the construction and built environment industry comply with minimum standards for accessibility for PWD in Malaysia. The local authority must strive harder to create its own mechanisms and action plan to create a barrier free environment based on Universal Design values' (Ch'ng, 2010).

The statement above showed that the government has focused on the role of local authorities to spearhead the cause and motivation for a more accessible Malaysia. This view is commonly held by the local government officers but also with the MWFC Minister and the DSWM. A proposal paper to upgrade access and services of PWD for a Barrier-Free Environment was tabled by the Minister concerned to the National Council for Local Government in order to address local authorities in the country to implement the laws, especially the Uniform Building By Law 34A. With reference to Kuala Lumpur City Hall, the creation of a special unit to handle issues pertaining to accessibility and universal design has been effective in getting Universal Design implemented.

#### *3.1. State Policy*

PWD Act Malaysia, 2008 covers the legislative aspects for access to public facilities, amenities and services and building. The National Policy for PWD in Malaysia espouses equal rights and opportunities to full participation in society for PWD. It recognizes the dignity, respect and liberty to enable them to live independently. This includes accessibility within and without buildings, places of employment, housing estates and public spaces. These policies are guided to implementation by the National Plan of Action for PWD. Malaysia is a party to the Biwako Millennium Framework for Action. On 8 April 2008, Malaysia signed the Convention the Rights of PWD and ratified the Convention on 19 July, 2010.

### 3.2. Legal regulations

The PWD Act came into force in 2008. The Act recognizes ‘the importance of accessibility to the physical, social, economic and cultural environment, to health and education and to information and communication, in enabling PWD to fully and effectively participate in society’. In Section 26, it is specifically stated that ‘PWD shall have the right to access to and use of, public facilities, amenities, services and buildings open or provided to the public on equal basis with persons without disabilities’. In general, these pieces of legislation are referred to when dealing with the built environment:

- Streets, Building and Drainage 1974 (Act 133)
- Uniform Building By Laws 1984
- Town and Country Planning Act 1976 (Act 172) and Town and Country Planning Act (Amendment) 1995 (Act A 33).

The Street, Drainage and Building Act 1974 was amended in 1991 to include By-Law 34A of the Uniform Building By-Law (UBBL 34A). This by-law was gazetted by the state governments between 1992 and 1996. It requires that new buildings must have access for PWD and building already constructed or under construction when this by-law came into force have to comply with the requirements of Malaysian Standard MS1183 and MS 1184 within 3 years. However, compliance to Malaysian Standard MS 1331: Code of Practice for Access of PWD Outside Buildings is not required under this by-law. Currently a revision exercise commenced in 2010 to merge MS 1184 and MS 1331 into one new standard which will be available in 2013.

### 3.3. Standardization

There are three codes of practices on access to built environment for PWD, namely the Malaysian Standard MS 1183, MS 1184 and MS 1331. The first two are required compliance under UBBL 34A of the Street, Drainage and Building Act. The existing standards including the ones on public toilets are:

- Malaysian Standard MS 1183: Part 8: 1990: Specifications for Fire Precautions in the Design and Construction of Buildings Part 8: Code of Practice for Means of Escape for PWD
- Malaysian Standard MS 1184: Code of Practice for Access for PWD to Buildings
- Malaysian Standard MS 1331: Code of Practice for Access of PWD Outside Buildings
- MS 2015: Public Toilet, Part 1 (2006): Minimum Design Criteria
- MS 2015: Public Toilet, Part 2 (2006): Inspection Criteria
- MS 2015: Public Toilet, Part 3 (2006): Rating Criteria
- MS 2015: Public Toilet, Part 4 (2006): Code of Practice for Maintenance

The Ministry of Housing and Local Government deemed it necessary to create guidelines to interpret the standards and these are:

- Guidelines for ‘Building Requirement for PWD 1999 for the Ministry of Housing and Local Government
- Guidelines for ‘Building Requirement for PWD 2000 for the Department of Town and Country Planning

### 3.4. Industry effort

The UBBL 34A is under the preview of municipal councils. Building plans submitted to the councils must comply with the requirements before they are approved. However, there is a lack of expertise with regards to the code of practice in the municipalities. Enforcement is also lax in ensuring that buildings that were constructed before the UBBL 34A came into force are retrofitted with accessible facilities

within the stipulated time. Having said that, government buildings in the administrative capital of Putrajaya and Kuala Lumpur, Kuala Lumpur International Airport, major shopping malls and large commercial buildings are built with or have been retrofitted with accessible facilities such as ramps and toilets. Hotels with 5 star rating have at least one wheelchair accessible room but not all fully comply with the code of practice. Mainstream schools are mostly not wheelchair accessible. Popular tourist spots have limited accessibility for people with mobility and visual impairments. However, parks in Putrajaya and Kuala Lumpur are accessible. See Figures1(a) – 3(b) for examples of accessible products and services that are available in Kuala Lumpur city.



Fig. 1. (a) wheelchair user accessing counter for official business; (b) ramp into a building at a low cost housing



Fig. 2. (a) ramp into a bridge building; (b) an example of a quick solution – A platform lift in Taman Tasik Titiwangsa



Fig. 3. (a) elevator buttons for wheelchair users; (b) an example for a heritage building solution – A hydraulic lift in Stadium Merdeka, Kuala Lumpur.Stadium, Kuala Lumpur



### 3.5. Research and development

Kuala Lumpur City Hall (KLCH) has created a Standards and Innovation Department, which deals exclusively on seven items including Disability. Also KLCH is planning to have Access Statements in the Development Control Process. Likewise, the Building and Architecture Department of the Ampang Jaya Municipal Council in the state of Selangor issued the Guideline on the Submission of Plans that requires the inclusion accessible facilities. A committee under the National Council of PWD is currently drafting training modules on access audit to provide better skills at understanding the built environment issues and how to write proper access audits from surveys and information gathering. Most of the public universities are involved in research pertaining to Universal Design including accessible tourism, accessible heritage buildings, transportation buildings and other types of buildings. Research on way-finding for those with visual impairments including landscape design with sensory features is also on-going.

## 4. Accessible design of transportation

In general, the current public transportation system in Malaysia is still not accessible for PWD; a situation that clearly negatively affects their quality of life. The efforts to improve the accessibility of the public transportation system thus far have been piecemeal or sporadic but the Ministry of Women, Family and Community Development has increasingly initiated meetings and discussions with public transportation operators, as well as sending a memorandum to the Cabinet Ministers to urge the Government to take better and more effective actions to ameliorate the transportation problems (JKM, 2010). The latest report by the Department of PWD (Noraini, 2010) stated that the following actions have been taken by the transportation industry:

- Malaysian Railways (KTMB) and the Mass Transit Train (LRT) are upgrading their stations with universal design facilities
- The Ministry of Transportation is coming out with guidelines for accessible buses
- Malaysian Airlines is providing wheelchair services assistance with the accommodation (wheel chair) free of charge.

### 4.1. State policy

The National Policy for PWD in Malaysia espouses equal rights and opportunities to full participation in society for PWD. It recognizes the dignity, respect and liberty to enable them to live independently. This includes accessibility within and without buildings, places of employment, housing estates and public spaces. On the issue of access to public transport, the policy seeks to 'improve the provision of public transport for PWD'. These policies are guided to implementation by the National Plan of Action for PWD.

At the same time, Malaysia is a party to the Biwako Millennium Framework for Action. On 8 April 2008, Malaysia signed the Convention the Rights of PWD and ratified the Convention on 19 July, 2010. In the Convention, it stated that 'PWD have a fundamental right to public transportation and this right has legal basis in the PWD Act 2008'. They 'shall have the right to access to and use of public transport facilities, amenities and services' and providers of these facilities must ensure that they 'conform to universal design' [UNDP, 2010 [Article 27 (1 & 2)]. Malaysia also has obligations under the Biwako Millennium Framework whose goal is to promote an inclusive, barrier-free and rights based society and more recently became a signatory to the Convention on the Rights of PWD. It therefore has obligations to ensure that State Parties take appropriate measures so that PWD will have access to public transport and the physical environment. Furthermore, 'The Government Transformation Program' under Malaysia's

Prime Minister has included amongst its six National Key Result Areas, one specifically addressing the upgrading of urban public transportation in the medium term. It is therefore timely that the Government of Malaysia adopts and enforces accessibility standards for planning of public transport, public facilities and infrastructure' (Prime Minister's Department, 2010)

#### 4.2. Legal regulation

Section 27 of the PWD Act (2008, Part IV) stated that 'PWD shall have the right to access to and use of public transport facilities, amenities and services open or provided to the public on equal basis with persons without disabilities'. However, there is no specific legislation pertaining to the accessible design of transportation.

#### 4.3. Standardization

There is no code of practice on accessible design of transportation. The Road Transport Department together with RapidKL and certain organizations of PWD are currently drawing up a draft on accessible facilities for the stage buses, the design that will be incorporated into 400 buses to be put on the road in phases in 2011.

#### 4.4. Industry efforts

RapidKL, the main transportation provider in Kuala Lumpur and Klang Valley has established Rapid Mobility, which are vans fitted with accessible features covering the Petaling Jaya area giving door to door service for PWD. Each trip is charged a heavily subsidised fare of MYR 3.00 (US\$1.00) per trip (see Figure 4(a)).

Following a street protest by PWD in 2006 against the lack of access to public transport, the main provider of public transport RapidKL has held dialogues with organizations of PWD facilitated by the Ministry of Transport. Subsequent to the dialogues, Rapid KL announced that they were putting 100 non-step buses with flip-out ramps. After a viewing of a prototype of the buses, organizations of PWD refused to endorse the buses due to the poorly designed ramps and insufficient wheelchair restraints. Despite the non-endorsement by organizations of PWD of the previous buses, RapidKL is running non-step buses for PWD in several major routes and areas in the Klang Valley, namely in Old Klang Road and Puchong.

The only fully accessible urban rail is the Kelana Jaya LRT Line, which is a part of the PUTRA-LRT whilst stations for the Ampang LRT Line (also under PUTRA-LRT) are currently being upgraded with lifts and other accessible facilities such as parking spaces (see Figures 4(b) and 4(c))



Fig. 4. (a) mobility vehicle for wheelchair users; (b) accessible parking in Kuala Lumpur; (c) pedestrian crossing lift over Jalan Loke Yew, Kuala Lumpur

The implementation of the regulations is often flawed. Figures 5(a) and 5(b) shows a vital component in using the light rail transit system is this staircase leading from KLCC (Kuala Lumpur City Centre Petronas Twin Towers) to the train concourse and platform levels. The platform lift is poorly manned and maintained where it could take to half an hour waiting for assistance to operate the platform lift. Improper planning and design is the problem that leads to this inaccessibility.



Fig. 5. (a) platform lift installed at the main staircase to the light railway transit station at a major transportation hub at KLCC (Source: Authors, 2011); (b) shows the instruction on a typed small piece of paper as the notice on how to use the platform lift, clearly lacking in contrast and font size to read for disabled persons (Source: Authors, 2011)

PWD can obtain concession parking passes with discount when they show their disability identification cards. Two car parks for PWD are available at all RapidKL stations. Nonetheless, the lax enforcement and frequent abuse of car parks for PWD must be addressed quickly.

As for air travel, the Malaysian Airlines provides wheelchair assistance and services free of charge and Air Asia provides these services free of charge when the disability identification card is produced, if not a payment of MYR12 is chargeable.

The Government has always encouraged transport companies to give concession fare to PWD. To date, several transport companies have given concession to PWD. Among them, Malaysia Airlines reduced fare by up to 50% for domestic flights; Keretapi Tanah Melayu provides train concession fare of up to 50% for all destinations and train classes; the bus company TRANASIONAL gives concession of 50% from normal bus fare and PUTRA-LRT has given LRT concession fare to PWD.

#### 4.5. Research and development

In 2008, the UNDP initiated the 'Transport for PWD: Support of the development of accessible transport in Penang'. The focus of this project is on activities to support the development of a fully accessible public transport in the state of Penang as well as the establishment of a demand responsive, door-to-door transport service. By increasing the transport options available to PWD, their social exclusion and vulnerability to poverty will be reduced, thereby promoting their economic independence. There are now several local universities in Malaysia researching on this area, including behaviour studies of passengers including PWD, ergonomics and design of transportation vehicles.

### 5. Conclusion

The Government recognizes the need to create the built environment and public transportation that is accessible to all. It is now widely acknowledged that such segregation runs contrary to the ideal of integration and that the demand from disabled persons is for facilities that provide interest for a broad range of people, without creating barriers for those with special needs. Legislations, namely the PWD Act and UBBL 34A, provides such rights for the built environment. However, implementation, compliance

and enforcement are lax. The issue of Accessible Design for Transportation is still in the infancy stage of planning and discussion for policies, which are mostly solved by the industry in a piecemeal manner. It is also imperative to ensure uninterrupted connectivity from one place to another in the form of accessible pedestrian walkways and public transport. With this in mind, there is an urgent need to incorporate the Malaysian Standard MS 1331 into the relevant legislations.

Among efforts done in propagating understanding the basic needs of disabled persons are through consultancy for new and existing building projects, advisory in committees and task forces and conducting disability awareness seminar. With the leadership and mentoring, academics, other professional concerned, disabled persons as resource persons and local government contacts could put their heads together to solve problems in the local context.

The evidence has yet to be seen in concrete legislations and a lot of push from the National Council, the organizations of PWD and NGOs is very much anticipated. The gaps in policies, regulations, standards, industry efforts and research development of the Accessible Design infrastructure for PWD in Malaysia have been initially assessed in this paper. The areas that need improvement have been highlighted. Therefore, it is essential that Malaysians learn further from the successes and failures of other countries whilst sharing its own experiences, so as to improve the situation in Malaysia in a shorter time frame.

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